AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior listings and versions:

1 to 6. (canceled).

7. (currently amended): A polynucleotide encoding an immunologically effective detoxified fragment of an *E. coli* heat labile toxin (LT-A) polypeptide, wherein ~~(i)~~ said fragment comprises an amino acid sequence selected from the group consisting of SLRSAHLR, LRSAHLRG, RSAHLRGQ, SAHLRGQS, AHLRGQSI, HLRGQSIL, LRGQSILS, and RGQSILSG.~~at least 8 contiguous amino acid residues of SEQ ID NO:1, wherein said at least 8 contiguous amino acids include a residue corresponding to Ala at is at least 8 amino acids in length; (ii) said fragment includes an amino acid residue at position 72, numbered relative to of SEQ ID NO:1; and (iii) said amino acid residue at position 72, numbered relative to SEQ ID NO:1, is an arginine residue.~~

8. (previously presented): The polynucleotide of claim 7 further comprising a sequence encoding a second immunogenic antigen.

9. (previously presented): The polynucleotide of claim 8 wherein the second immunogenic antigen comprises a subunit B of an *E. coli* heat labile toxin (LT-B).

10. (previously presented): The polynucleotide of claim 9, wherein the LT-A and LT-B are encoded in a polycistronic unit.

11. (previously presented): An expression vector comprising the polynucleotide of claim 7.

12. (previously presented): An expression vector comprising the polynucleotide of claim 8.

13. (previously presented): An expression vector comprising the polynucleotide of claim 9.

14. (previously presented): An expression vector comprising the polynucleotide of claim 10.

15. (previously presented): A host cell comprising the expression vector of claim 11.

16. (previously presented): A host cell comprising the expression vector of claim 12.

17. (previously presented): A host cell comprising the expression vector of claim 13.

18. (previously presented): A host cell comprising the expression vector of claim 14.

19. (previously presented): The host cell of claim 15, wherein the host cell is selected from the group consisting of a bacterium, a mammalian cell, a baculovirus, an insect cell and a yeast cell.

20. (previously presented): The host cell of claim 19, wherein the host cell is *E. coli.*

21. (previously presented): The host cell of claim 19, wherein the host cell is a mammalian cell.

22. (previously presented): The host cell of claim 19, wherein the host cell is an insect cell.

23. (previously presented): The host cell of claim 19, wherein the host cell is a yeast cell.

24. (previously presented): The host cell of claim 19, wherein the host cell produces the amino acid sequence intracellularly.

25. (previously presented): The host cell of claim 19, wherein the host cell secretes the amino acid sequence.

26. (previously presented): The *E. coli* host cell of claim 19, wherein the host cell is mutated to produce a phenotype lacking wild type LT-A.

27. (previously presented): A method of producing a recombinant protein comprising:

(a) providing a population of host cells according to claim 15; and

(b) culturing said population of cells under conditions whereby the LT-A or fragment thereof encoded by the polynucleotide in said expression vector is expressed.

28. (previously presented): A method of producing a recombinant protein comprising:

(a) providing a population of host cells according to claim 17; and

(b) culturing said population of cells under conditions whereby the LT-A or fragment thereof and the LT-B encoded by the polynucleotide in said expression vector is expressed.

29. (previously presented): A method of producing a recombinant protein comprising:

(a) providing a population of host cells according to claim 26; and

(b) culturing said population of cells under conditions whereby the LT-A or fragment thereof encoded by the polynucleotide in said expression vector is expressed.

30. (withdrawn): A polynucleotide encoding an immunologically effective detoxified fragment of an *E. coli* heat labile toxin (LT-A) polypeptide, wherein ~~(i)~~ said fragment comprises an amino acid sequence selected from the group consisting of SLRSAHLR, LRSAHLRG, RSAHLRGQ, SAHLRGQS, AHLRGQSI, HLRGQSIL, LRGQSILS, and RGQSILSG. ~~at least 8 contiguous amino acid residues of SEQ ID NO:2, wherein said at least 8 contiguous amino acids include a residue corresponding to Ala at is at least 8 amino acids in length; (ii) said fragment includes an amino acid residue at position 72, numbered relative to of SEQ ID NO:2; and (iii) said amino acid residue at position 72, numbered relative to SEQ ID NO:1, is an arginine residue.~~

31. (withdrawn): A polynucleotide encoding an immunologically effective detoxified fragment of an *E. coli* heat labile toxin (LT-A) polypeptide, wherein ~~(i)~~ said fragment comprises an amino acid sequence selected from the group consisting of TLRQAHLR, LRQAHLRG, RQAHLRGQ, QAHLRGQN, AHLRGQNI, HLRGQNIL, LRGQNILG, and RGQNILGS. ~~at least 8 contiguous amino acid residues of SEQ ID NO:3, wherein said at least 8 contiguous amino acids include a residue corresponding to Ala at is at least 8 amino acids in length; (ii) said fragment includes an amino acid residue at position 72, numbered relative to of SEQ ID NO:3; and (iii) said amino acid residue at position 72, numbered relative to SEQ ID NO:1, is an arginine residue.~~

32. (withdrawn): A polynucleotide encoding an immunologically effective detoxified fragment of an *E. coli* heat labile toxin (LT-A) polypeptide, wherein ~~(i)~~ said fragment comprises an amino acid sequence selected from the group consisting of TLRQAHFR, LRQAHFRG, RQAHFRGQ, QAHFRGQN, AHFRGQNM, HFRGQNML, FRGQNMLG, and RGQNMLGG. ~~at least 8 contiguous amino acid residues of SEQ ID NO:4, wherein said at least 8 contiguous amino acids include a residue corresponding to Ala at is at least 8 amino acids in length;(ii) said fragment~~

~~includes an amino acid residue at position 72, numbered relative to of~~ SEQ ID NO:4; ~~and (iii) said amino acid residue at position 72, numbered relative to SEQ ID NO:1, is an arginine residue~~.